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| 09/971,135 | 10/04/2001 | Lance W. Russell | 10012453-1 | 1637 |

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HEWLETT-PACKARD COMPANY
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| EXAMINER |
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LANE, JOHN A

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| ART UNIT | PAPER NUMBER |
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2188

DATE MAILED: 05/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/971,135

Applicant(s)

RUSSELL

Examiner

Jack A. Lane

Art Unit

2188

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-10 and 12-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-14 is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-10 and 15-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

1. This Office action is responsive to the RCE filed 04/25/2005. Claims 1-5, 7-10 and 12-26 are presented for examination. Any objections or rejections made in the previous office action not specifically repeated below are withdrawn or have been overcome by applicant's response.

The Terminal Disclaimer filed 11/22/2004 has been approved. The SPRE shop erroneously issued a notice of disapproval on 11/22/04 and has yet to subsequently issue a notice of approval. However, the examiner personally conducted an interview with a SPRE specialist whom indicated approval of the Terminal Disclaimer. The examiner apologizes for any confusion this may have caused.

With respect to Applicant's Response to the Advisory Action filed 04/25/2005, some clarification with respect to the request for information and the IDS's filed appears in order. Applicant has repeatedly stated the following with respect to the request for information:

MPEP 704.11 provides that "a requirement under 37 CFR 1.105 may only be made when the examiner has a reasonable basis for requiring information"

In response, the Examiner initiated a request for information in the non-final Office action mailed 08/18/2004. Subsequent to the request on 11/18/2004 an IDS was filed including a reference to Morioka et al. (Pat. No. 6,631,447) clearly a 102 reference applicable to all the pending claims. Applicant received notification of this reference in related application Ser. No. 09/971,989 cited by Examiner Elmore in a non-final Office action mailed 09/28/2004. Applicant properly filed the IDS dated 11/18/2004 in response to the request for information and duty to

disclose. The above actions by Applicant are not the source of concern. Applicant's comments supporting the necessity of the request for information are cause for concern. Applicant stated in the after-final amendment mailed 04/01/2005:

[T]he Examiner has failed to make any showing whatsoever that his request for "any documentation known to qualify for prior art" is reasonably necessary to the examination or treatment of a matter in the present application, much less any showing that meets the criteria described in paragraphs (A) or (B) above. Indeed, the fact that such a showing cannot be made is evidenced by the relevant prior art the Examiner has cited in his rejection of the claims (i.e., the fact that the Examiner was able to locate the cited prior art demonstrates that that (sic) the claimed subject matter can be adequately searched).

In response, as stated in the Advisory Office action, the reference to Morioka was only found when reviewing related application Ser. No. 09/971,989. Also, as previously stated, for whatever reason, be it Examiner oversight or database error, the IDS filed November 18, 2004 was not noticed at the time the final Office action was written. The important point here is that a pertinent 102 reference (Morioka) was revealed to Applicant after the present Examiner's first Office action and properly supplied to the Examiner. This provides prima facie evidence that such request for information was necessary and reasonable. A second, even more important concern here is that Applicant never revealed copending related application Ser. No. 09/971,989 to the present Examiner prior to the first Office action. The Examiner was only made aware of the related application when the Terminal Disclaimer was filed 11/22/2004 some 3 months after the first Office action.

The Applicant should reconsider the Request for Information for reasons found below in section 2.

2. This Request for Information is in response to Applicant's Remarks in the response filed 04/25/2005. Applicant responds to the Examiner's prior Requests for Information and states the following (see Response to Advisory Action, pp. 2-3):

It is unclear why the Examiner has excluded U.S. Patent No. 6,157,955 from consideration as an example of a prior art reference on which the bulleted statements are based, especially since this patent teaches the information contained in each of these statements:

The Examiner did not include the U.S. patent when considering the background art because it was not at all clear that the U.S. patent embodied all of the background prior art. The Application simply states:

To address some of these issues, U.S. Patent No. 6,157,955 has proposed a general-purpose programmable packet-processing platform for accelerating network infrastructure applications that have been structured to separate the stages of classification and action...modules.

The language "[T]o address some of these issues" does not clearly indicate what prior art the patent discusses and where support is located. The U.S. patent document is some 128 columns long making it difficult to locate such support. Perhaps specific portions of the U.S. patent should be discussed in tandem with the background art discussion (as done in the Response to the Advisory Action).

The Examiner will now attempt to analyze Applicant's support for requested background art. In response to the Examiner's request for information related to the following background art:

[N]etwork infrastructure services conventionally are implemented as one or more software modules executing on general-purpose computers.

Applicant states the following:

US patent No. 6,157,955 discloses that: "General Purpose computers, such as PCs running NT/Windows or workstations running Solaris/HP-UX, etc. are a common method for deploying network infrastructure applications." (Col. 1, lines 52-55)

In response, the above text does not mention the "software modules" or "infrastructure services." It appears the "infrastructure services" could correspond to the "infrastructure applications", however, the infrastructure services may also include OS type services including IPC, file system, memory management, threads, I/O etc... that are not part of the applications. Are the "services" the same as the "applications?"

In response to the Examiner's request for information related to the following background art:

New network infrastructure applications may be loaded and, generally, existing network infrastructure applications may be updated on a general-purpose computer simply by loading the new application or application update.

Applicant states the following:

U.S. Patent No. 6,157,955 discloses that "There are, however, a couple of key issues with special function appliances. For example, they are not expanded by their very nature. If the network manager needs a new application, he/she will need to procure a new appliance. Contrast this with loading a new application on a desktop PC. In the case of the PC, a new appliance is not needed with every new application." (Col. 2, lines 61-67; emphasis added)

In response, the above text does not mention “network infrastructure applications...loaded...or updated.” The above text mentions a network manager needing a new appliance and loading a new application on a PC.

Applicant still has not addressed the following request present in the final Office action:

In the present disclosure, the background section identifies several prior art roundtable networks/protocols (including SNA, OSI, TCP/IP, XNS, IPX, AppleTalk, and DECnet), prior art network infrastructure services and prior patent 6,157,955. Applicant must specifically consider this prior art when complying with the above requests/1.105 requirement.

The Examiner specifically requested:

[A]ny documentation known to qualify as prior art under 35 U.S.C. sections 102 or 103 with respect to the invention as defined by the independent and dependent claims.

and;

[A] discussion of relevant passages, figs. etc. with respect to the claims must be provided. The examiner is looking for specific references to 102/103 prior art that identify independent and dependent claim limitations. Since applicant is most knowledgeable of the present invention and submitted art, his/her discussion of the reference(s) with respect to the instant claims is essential.

Applicant has presented prior art via the background discussion and/or the prior U.S. patent (6,157,955) that appears to teach loading or updating a “kernel providing basic operating services to the network device and to load the received kernel” as found in claim 1, “changing the network infrastructure function...comprises routing...network service application providing the network infrastructure function” as found in claim 15

and “change the network infrastructure function by routing...network service application” as found in claim 21. Applicant must address whether the prior art reads on these new limitations.

Applicant still has not responded to the following request present in the non-final and final Office actions:

The examiner also requests, in response to this Office action, a showing of support for language added to any original claims on amendment and any new claims. That is, indicate support for newly added claim language by specifically pointing to page(s) and line no(s). in the specification and/or drawing figure(s). Additionally, in the event documentation is incorporated by reference (i.e. publications or “common knowledge” (generally found in the background section but not a publication) and is relied upon for supporting claim limitations, such supporting documentation and limitations must be identified. This will assist the examiner in prosecuting the application. Here again this request is derived from 37 C.F.R. 1.105.

Support for the newly added limitations in claims 1, 5, 12, 15 and 21 has not been shown. Applicant must provide this support in response to this Office action.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-5, 7-10 and 15-26 are rejected under 35 U.S.C. 103(a) as being unpatentable Ramaswamy et al. (Pat. No. 6,424,621) in view of the admitted prior art.

Ramaswamy teaches the claimed “system...services” corresponding to the network system shown in figures 3 and 7. The claimed “shared memory” corresponds to shared memory 34 or 14 (see fig. 2). The claimed “plurality of network devices” corresponds to circuitry including processors 24 having cache memory 25, switching processor 44 (one of processors 24) and control processor 42 (another of processors 24). Shared memory 34 (14) is interconnected to processors 24, switching processor 44 and control processor 42. Control processor 42 performs the function of load balancing and network management functions. The claimed local processor corresponds to one of processors 24 (fig. 2). The claimed local memory corresponds to one of cache memory 25. The claimed “local communications protocol stack” corresponds to the stack discussed at col. 11, lines 45-65. The claimed “shared memory interface system” corresponds to circuitry including system bus 12. The claimed “maximum transfer unit (MTU)” corresponds to the circuitry including the bus and byte transfer widths. The claimed “remote nodes” could correspond to another of processors 24.

However, Ramaswamy does not specifically discuss updating, changing or replacing existing kernels/infrastructure functions. The admitted prior art discussed in the background section of the present specification teaches replacing/updating network infrastructure functions/services/applications/modules/kernels to configure a network

device in accordance with the users needs. Updating or changing existing kernels/infrastructure functions provides the greatest flexibility.

Because changing/updating or replacing existing kernels/infrastructure functions provides greater flexibility for the user, it would have been obvious to use such a system as found in the admitted prior art to update/change or replacing existing network management functions/kernels/applications existing in Ramaswamy. Therefore, the claimed invention would have been obvious to one of ordinary skill in the art at the time of the invention.

The examiner believes all dependent claim features not specifically discussed above are expressly or inherently taught by Ramaswamy. The remaining dependent claim features, while part of the invention, appear to be well known and their relevance not essential to the main invention found in the independent claim(s). Thus, a detailed discussion of the well known claim feature(s) is not warranted at this time.

In the event applicant disagrees with the characterization of certain dependent claim elements as being “expressly or inherently” taught by the reference, applicant must specify exactly what claim elements are considered “novel” or “allowable” and why they are allowable (e.g. the claim feature is not suggested/taught in the art of record).

In the Remarks filed 11/22/2004, applicant argues:

The shared memory 34, however, does not provide a physical transport medium for routing packets between the control and switching processors 42, 44. Indeed, in Ramaswamy's system, the shared memory 34 is used only to communicate the information contained in the routing table 62, the configuration table 64, and the collection table 66 between the control processor 42 and the switching processors 44; packets are not routed through the shared memory 34

In response, the Abstract states:

A memory space is shared by the control processor and the data packet switching processors. The data packet switching processors route an incoming data packet directed to a user application program to the memory space. The pseudo-network driver retrieves the incoming data packet from the shared memory space and provides the data packet to the user application program.

As shown in figure 8, data packets go from/to switching processor 44, to/from shared memory 34 and to/from control processor 42.

5. Claims 1-5, 7-10 and 15-26 are rejected under 35 U.S.C. 103(a) as being unpatentable Morioka (Pat. No. 6,631,447) in view of the admitted prior art.

Morioka teaches the invention including a multi-computer system, comprising a plurality of local nodes interconnected by a shared memory, each local node comprising: a local processor (e.g., see Figure 1),
a local memory (e.g., see Figure 1),
a local communications protocol stack as network protocol (e.g., see col. 8, line 31 to col. 9, line 7)-, and, a shared memory interface system operable to provide a local shared memory network between the local nodes, and a global shared memory network between the local nodes and one

or more remote nodes by capturing packets from the local communications protocol stacks and routing the captured packets over the shared memory (e.g., see Figures 15-16 and col. 20, line 21 to col. 24, line 24).

Morioka teaches one or more local nodes comprise one or more physical network adapters for connection to one or more remote nodes as part of the overall network configuration such as a NUMA network, a DASH system or a network using SCI protocol (e.g., see col. 1, line 10 to col. 4, line 3).

Morioka teaches the shared memory interface system (facility) on each local node supports multicast and broadcast transmissions over the shared memory from the local shared memory network and the global shared memory network; a broadcast ring structure and a multicast ring structure are allocated in shared memory for each of the local and global shared memory networks as cluster and inter-cluster communication protocol (e.g., see col. 27, line 55 to col. 8, line 28).

Morioka teaches the ring structure includes the capability of transmitting and receiving packets as part of the structural capacity (e.g., see Figures 15-16 and col. 20, line 21 to col. 24, line 24).

Morioka teaches having a read pointer and a write pointer associated with the ring structure as being part of the memory subsystems (e.g., see Figure 16).

Morioka teaches the shared memory is implemented by a global shared memory facility, a distributed shared memory facility or a logically shared memory facility as part

of the overall network configuration such as a NUMA network, a DASH system or a network using SCI protocol (e.g., see col. 1, line 10 to col. 4, line 39).

However, Morioka does not specifically discuss updating, changing or replacing existing kernels/infrastructure functions. The admitted prior art discussed in the background section of the present specification teaches replacing/updating network infrastructure functions/services/applications/modules/kernels to configure a network device in accordance with the users needs. Updating or changing existing kernels/infrastructure functions provides the greatest flexibility to the user.

Because changing/updating or replacing existing kernels/infrastructure functions provides greater flexibility for the user, it would have been obvious to use such a system as found in the admitted prior art to update/change or replacing existing network management functions/kernels/applications existing in Morioka. Therefore, the claimed invention would have been obvious to one of ordinary skill in the art at the time of the invention.

The examiner believes all dependent claim features not specifically discussed above are expressly or inherently taught by Morioka . The remaining dependent claim features, while part of the invention, do not appear essential to the main invention found in the independent claim(s). Thus, a detailed discussion of the well known claim feature(s) is not warranted at this time.

In the event applicant disagrees with the characterization of certain dependent claim elements as being “expressly or inherently” taught by the reference, applicant must

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specify exactly what claim elements are considered “novel” or “allowable” and why they are allowable (e.g. the claim feature is not suggested/taught in the art of record).

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant should review the prior art not relied upon for its relevance to the instant claims.

Goodman teaches updating firmware.

Any response to this action should be mailed to:

Under Secretary of Commerce for Intellectual Property and Director of the
United States Patent and Trademark Office
PO Box 1450
Alexandria, VA 22313-1450

or faxed to:

(703) 872-9306, (for Official communications intended for entry)

Or:

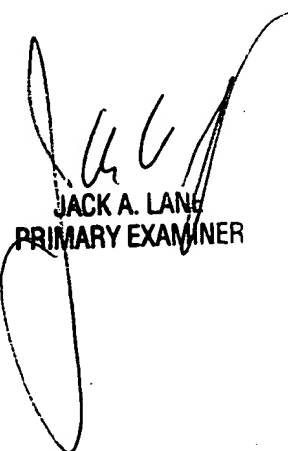
(703) 872-9306, (for Non-Official or draft communications, please label
"Non-Official" or "DRAFT")

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack A. Lane whose telephone number is 571 272-4208. The examiner can normally be reached on Mon-Fri from 7:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on 571 272-4210.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571 272-2100



JACK A. LANE
PRIMARY EXAMINER